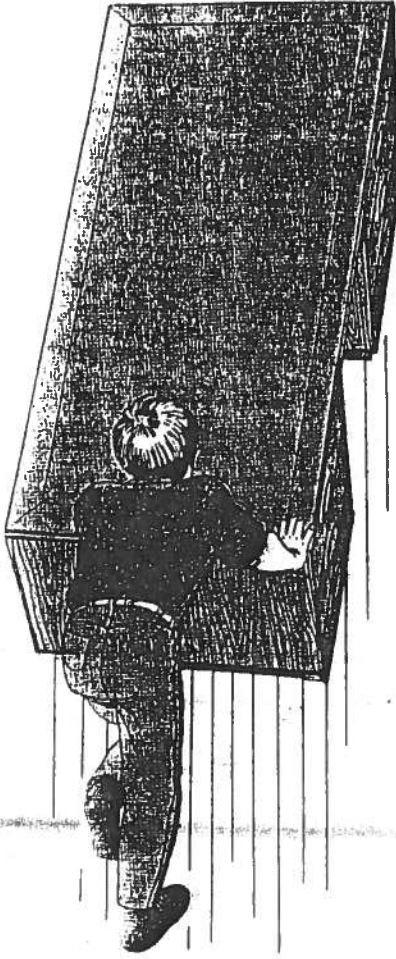


Balanced and Unbalanced Forces



Suppose your teacher asked you to move a heavy desk in your classroom. How would you move it? You might get on one side of the desk and start pushing. Or you might grab the legs and start pulling. Either way, you would be using a **force**. Any push or pull is a force.

The force you use in pushing or pulling the desk has a size. You could use a small amount of force or a lot of force. Forces differ in size. Another way forces differ is in direction. A force can be left or right, or up or down.

The desk will not move by itself. A force is needed to put the desk in motion. But even when the desk is not moving, forces are acting on it. The floor is actually pushing up on the desk. At the same time, the force of gravity is pulling down on it. If the desk is not in motion, the upward push is the same as the downward pull. The size of the forces is the same, but the directions of the forces are different. Whenever forces are the same in size but opposite in direction, they are balanced forces. An object that is not in motion will never move if balanced forces act on it.

How can you move the desk? You can move it because you unbalance the forces. The size of your force is greater than the force of air pushing on the other side of the desk. Unbalanced forces act in opposite directions but differ in size. If unbalanced forces act on an object, the object will always move in the direction of the greater force.

A. Answer True or False.

1. Any push or pull is a force. _____
2. Forces do not differ in direction. _____
3. A force is needed to put things in motion. _____
4. When an object is not moving, forces are not acting on it.

5. Forces different in size but the same in direction are balanced forces. _____
6. Unbalanced forces act in opposite directions but differ in size.

B. Answer the questions.

1. Why does a heavy desk not move by itself? _____

2. When a heavy desk is not moving, what kind of forces are acting on it? _____

3. If unbalanced forces act on a desk, the desk will always move in which direction? _____

(C. Write the letter for the correct answer.

1. An object that is not in motion will _____ move if balanced forces act on it.
(a) always (b) sometimes (c) never
2. You can move an object because you _____.
(a) balance gravity (b) balance forces (c) unbalance forces
3. Forces differ in _____.
(a) size only (b) direction only (c) size and direction